

U.S. Serial No.: 10/805,769
Docket No.: 2156-528A

Examiner: R. Harlan
Art Unit: 1713

CLAIM AMENDMENTS

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Claims 1-24. (Canceled)

Claim 25. (Currently amended) A method of adhering a photopolymer resin to an underlying substrate during a process of manufacturing in the manufacture of flexographic printing elements, the method comprising the steps of:

a) coating an aqueous primer dispersion onto the substrate, wherein the aqueous primer comprises:

- i) a binder;
- ii) a copolymer or monomer;
- iii) a layered silicate;
- iv) optionally, a surfactant; and
- v) optionally, a dye or pigment; and

b) adhering a solvent-developable photopolymer resin to the primed substrate, whereby a flexographic printing element is produced.

Claim 26. (Original) The method according to claim 25, wherein prior to step a), the substrate is pretreated with an adhesion promoting composition.

Claim 27. (Original) The method according to claim 25, wherein the binder comprises a polyurethane.

Claim 28. (Original) The method to claim 27, wherein the concentration of the polyurethane in the aqueous primer composition is about 20% to about 75% by weight based on dry content.

Claim 29. (Original) The method according to claim 25, wherein the copolymer is an ethylene acrylic acid copolymer.

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U.S. Serial No.: 10/805,769
Docket No.: 2156-528A

Examiner: R. Harlan
Art Unit: 1713

Claim 30. (Original) The method according to claim 28, wherein the concentration of the copolymer in the aqueous primer composition is about 5% to about 40% by weight based on dry content.

Claim 31. (Original) The method according to claim 25, wherein the layered silicate is selected from the group consisting of phyllosilicates, micaceous minerals, mixed layered illite/smectite minerals, and combinations of the foregoing.

Claim 32. (Original) The method according to claim 31, wherein the layered silicate is a phyllosilicate and is selected from the group consisting of montmorillonite, nontronite, biedellite, volkonskonite, hectorite, saponite, sauconite, sobockite, stevensite, svinfordite, vermiculite, and combinations of the foregoing.

Claim 33. (Original) The method according to claim 32, wherein the layered silicate is a montmorillonite and is selected from the group consisting of sodium montmorillonite, calcium montmorillonite, magnesium montmorillonite, and combinations of the foregoing.

Claim 34. (Original) The method according to claim 31, wherein the concentration of the layered silicate in the aqueous primer composition is about 1% to about 10% by weight based on dry content.

Claim 35. (Original) The method according to claim 25, wherein the layered silicate is dispersed in water and the dispersion is then added to the aqueous primer composition.

Claim 36. (Original) The method according to claim 35, wherein the layered silicate dispersion is mixed into the aqueous primer composition through high shear mixing.

Claim 37. (Original) The method according to claim 25, wherein the surfactant is a non-ionic surfactant.

{W1460631}

U.S. Serial No.: 10/805,769
Docket No.: 2156-528A

Examiner: R. Harlan
Art Unit: 1713

Claim 38. (Original) The method according to claim 35, wherein the concentration of the surfactant in the aqueous primer composition is about 0.5% to about 5% by weight based on dry content.

Claim 39. (Original) The method according to claim 38, wherein the surfactant is pre-mixed with a rheology modifier and water before being added to the aqueous primer composition.

Claim 40. (Original) The method according to claim 25, wherein the substrate is formed from a transparent or opaque material, wherein said material is selected from the group consisting of paper, cellulosic films, polymers and metals.

Claim 41. (Original) The method according to claim 35, wherein the aqueous primer dispersion is coated onto the substrate by roll coating, brush coating, or spray coating.

Claim 42. (New) A flexographic printing element comprising:

- a) a flexible support layer;
- b) an aqueous primer dispersion coated onto the flexible support layer, the aqueous dispersion comprising:
 - i) a binder;
 - ii) a copolymer or monomer;
 - iii) a layered silicate;
 - iv) optionally, a surfactant; and
 - v) optionally a dye or pigment; and
- c) a solvent-developable photosensitive layer on the aqueous primer dispersion coating.

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